36.11.408   BIODIVERSITY - SELECTION OF SILVICULTURAL
SYSTEMS   (1)   Selection of silvicultural systems shall typically
be based on natural disturbance regimes. The three predominant
regimes are:
    (a)   stand-replacement fire;
    (b)   mixed severity fire; and
    (c)   non-lethal fire.
    (2)   Other disturbance mechanisms which may be predominant
on a site and shall be considered when selecting treatments
include, but are not limited to:
    (a)   insects;
    (b)   disease; and
    (c)   wind.
    (3)   The department shall consider the range of disturbance
regimes possible for any site to avoid inflexible and
inappropriate treatments.
    (4)   The department shall consider objectives that may
suggest emulating a disturbance event that does not adhere to
the predominant regime.
    (5)   When emulating a stand-replacement disturbance, the
department shall leave some scattered or clumped standing live
trees. Silvicultural systems that equate to stand-replacement
are clearcut and seed tree.
    (a) The department shall consider the patchy distribution
of surviving trees following natural disturbance, and emulate
that condition to the extent practicable.
    (b) Actual numbers and distribution of live trees retained
in emulations of stand replacement disturbances shall be site-
specifically determined (see ARM 36.11.411).
    (c) Larger proportions of early successional stands will
typically be present with these regimes than with other regimes.
    (6) Silvicultural systems that emulate mixed severity
regimes are modified shelterwood and group selection.
    (a) Retained trees shall be from among those that would
most likely have survived the disturbance, and in an arrangement
typical for the disturbance, as appropriate for meeting
fiduciary and project-level objectives.
    (b) With most mixed severity treatments, the department
shall open the stand enough for natural regeneration of shade
intolerant species, or sufficiently so that inter-planted
seedlings have the opportunity to survive.
    (c) Clumps of small shade tolerant species may be
appropriate for retention.
    (d) Greater range in stand variability is typical of this
regime, including clumps of similar age classes within multi-
aged stands.

(7) Selection harvests shall be designed or developed to maintain uneven-aged conditions when emulating non-lethal underburns.

(a) The department shall design these treatments to ensure regeneration of shade intolerant species through natural regeneration or through planting of desired species.

(b) This regime will have higher proportions of older age classes and fewer early successional stands.

(c) The department shall generally avoid treatments that attempt to impose uneven-aged conditions on areas that traditionally existed in an even-aged condition.

(8) The department shall design selection systems or commercial thinnings when emulating single-tree or gap replacement disturbances. Such treatments do not fit within typical fire based disturbance regimes, but shall be used by the department as determined applicable at the project level. In such cases, the department does not expect regeneration of shade intolerant species and may not desire regeneration of any species. Two potential situations for this type of treatment are:

(a) commercial thinning to promote growth of residual trees; or

(b) individual tree selection in mixed stands of shade-tolerant species where, under natural conditions, individual trees died and subsequently fell, creating a gap in the canopy.

(9) Where fire is the predominant disturbance mechanism, the department shall consider:

(a) how fire may have burned in a particular location, and under site-specific conditions including:

(i) topography;

(ii) climatic zones; and

(iii) prevailing winds.

(b) using existing stand boundaries from previous fires to enhance a natural appearance, to the extent they coincide with boundaries expected from natural disturbance regimes. (History: 77-1-202, 77-1-209, 77-5-201, 77-5-204, MCA; IMP, 77-5-116, 77-5-204, 77-5-206, 77-5-207, MCA; NEW, 2003 MAR p. 397, Eff. 3/14/03.)